

CLAIMS

1. An adjusting method for endoscope systems comprising:
a first adjusting step of comparing video signals,
which are produced from illumination light rays that are
reflected from an object and whose wavelengths fall within
first, second, and third ranges, with one another, and
regulating a lamp current that flows into a light source
lamp;
a second light adjusting step of adjusting a diaphragm
that controls an amount of light which is emitted from the
light source lamp and which is irradiated to the object; and
a storing step of storing the lamp current regulated at
the first adjusting step and a light limiting level adjusted
at the second adjusting step.
2. An adjusting method for endoscope systems according to
Claim 1, wherein at the first adjusting step, the peak
values of the video signals are compared with one another.
3. An adjusting method for endoscope systems according to
Claim 1, wherein: at the first adjusting step, it is
determined whether the ratio of the video signal whose
wavelength falls within the first range to the video signal
whose wavelength falls within the second range meets a first
condition; and when the ratio meets the first condition, the
lamp current is regulated so that the ratio meets a second
condition under which a white balance is obtained.

4. An adjusting method for endoscope systems according to Claim 1, wherein the video signals whose wavelengths fall within the first, second, and third ranges are produced from illumination light rays having the wavelengths specific to red, green, and blue respectively.

5. An adjusting method for endoscope systems according to Claim 1, wherein the lamp current and light limiting level stored at the storing step are read and used to light the light source lamp and to control the diaphragm.

6. An adjusting method for endoscope systems according to Claim 1, wherein when the object is a white object, when the light source lamp is lit, the lamp current is automatically adjusted at the first adjusting step so that the video signals represent white.

7. An adjusting method for endoscope systems comprising:
a comparing step of comparing video signals, which are produced from light rays that are reflected from an object and whose wavelengths fall within first, second, and third ranges, with one another;

a lamp current regulating step of regulating a lamp current, which flows into each of light source lamps that emit light rays whose wavelengths fall within first, second, and third ranges, according to the result of the comparing step; and

a storing step of storing the lamp current regulated at

the lamp current regulating step.

8. An adjusting method for endoscope systems comprising:

a brightness determination step of determining whether an amount of light reflected from an object is associated with a predetermined brightness level;

a light limiting level determination step of when it is determined at the brightness determination step that the amount of reflected light is associated with the predetermined brightness level, determining whether a diaphragm is set to a predetermined light limiting level; and

a setting step of setting the light limiting level to the predetermined level according to the result of the determination made at the light limiting level determination step.

9. An adjusting method for endoscope systems according to Claim 8, wherein at the setting step, when the light limiting level is set to the predetermined level according to the result of the determination made at the light limiting level determination step, the elapse of a predetermined time is waited.

10. An adjusting method for endoscope systems according to Claim 9, wherein at the setting step, after the elapse of the predetermined time is waited, it is determined whether the light limiting level is set to the predetermined level.

11. An adjusting method for endoscope systems according to Claim 9, wherein at the setting step, after the elapse of the predetermined time is waited, when it is determined that the light limiting level is not set to the predetermined level, a warning is given.

12. An endoscope system comprising:

an endoscope having a light guide over which illumination light is propagated and from the end of which the illumination light is emitted, and an imaging device for imaging an object illuminated with the illumination light;

a light source device having: a light source lamp for generating white light; a lamp lighting circuit for supplying a lamp lighting current which lights the light source lamp; and an optical filter for receiving the white light generated by the light source lamp, and supplying field-sequential light rays having first, second, and third wavelengths as illumination light to the light guide;

a signal processing device for receiving an image signal that results from photoelectric conversion performed by the imaging device, and transmitting first, second, and third color signals that are successively produced under the light rays having the first, second, and third wavelengths;

a controller that is included in the light source device, that compares luminance levels, which are specified in the first, second, and third color signals, with one

another, and that adjusts an amount of light emitted from the light source lamp, to which the lamp lighting circuit supplies a current, so that the ratio of the luminance level specified in the first color signal to the one specified in the second color signal to the one specified in the third color signal falls within a predetermined range;

a data storage in which data of a sequence according to which the controller executes light level adjustment is stored; and

an instructing/operating section for use in instructing automatic execution of light level adjustment by the controller.

13. An endoscope system according to Claim 12, wherein the optical filter is located on the path of illumination light emanating from the light source lamp, has three openings formed on the perimeter of a rotary disk thereof that is rotated by a motor, and has the three openings covered with color transmission filters that pass light rays having the first, second, and third wavelengths.

14. An endoscope system according to Claim 12, wherein the lamp lighting circuit supplies a pulse lamp current to the light source lamp.

15. An endoscope system according to Claim 12, wherein the controller receives luminance information, which is acquired by imaging an object, from the signal processing

device.

16. An endoscope system according to Claim 12, wherein the light source device is located on the path of illumination light emanating from the light source lamp, and has a diaphragm whose light limiting level is varied by a diaphragm control circuit.

17. An endoscope system according to Claim 16, wherein the controller receives luminance information acquired by imaging an object, and controls adjustment of the diaphragm so that the light limiting level is set to a value falling within a predetermined range.

18. An endoscope system according to Claim 12, further comprising a data memory in which data that determine an amount of light emanating from the light source lamp is stored, wherein the controller executes light level adjustment, and the amount of light emanating from the light source lamp is adjusted so that the ratio of the luminance level specified in the first color signal to the one specified in the second color signal to the one specified in the third color signal falls within the predetermined range.

19. An endoscope system according to Claim 18, wherein based on the data stored in the data memory, the amount of light which the light source lamp emits with a current supplied by the lamp lighting circuit is determined.

20. An endoscope system according to Claim 17, wherein

the optical filter supplies illumination light rays having the wavelengths specific to red, green, and blue as field-sequential light rays having the first, second, and third wavelengths to the light guide.

21. An endoscope system according to Claim 12, wherein the controller writes the results of light level adjustment in a memory.

22. An endoscope system according to Claim 21, wherein the memory in which the results are written is an electrically programmable nonvolatile memory.